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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,306	12/15/2000	Kevin Kwong-Tai Chung	AI-TECH-30	1695

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PHILADELPHIA, PA 19103-2307

EXAMINER

TREMBLAY, MARK STEPHEN

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

11.D

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/737,306		CHUNG, KEVIN KWONG-TAI	
	<b>Examiner</b>		<b>Art Unit</b>	
	Mark Tremblay		2876	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-81 and 83-102 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-81 and 83-102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Applicant: Chung

Filing date: 12/15/2000

***Claim Rejections - 35 U.S.C. §103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 13-19, 22, 24-37, 39-41, 43-49, 51-55, 57-59, 74-75, 77-79, 82-83, and 85-102 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent #6,081,793 to Challenger et al. ("Challenger" hereinafter) in view of Performance and Test Standards For Punchcard, Marksense, and Direct Recording Electronic Voting Systems by the Federal Election Commission ("Fed" hereinafter). Challenger teaches a voting apparatus comprising:

a processor 225 (a processor is inherent in the term "server") for processing voting information (see abstract) and providing a voting session identifier (see Fig. 7, item #389);

a display (see figure 1C) coupled for receiving voting information from said processor;

a voter interface (the "voter's PC") for receiving voting selections made by a voter and coupling same to said processor, said processor providing a voting record including the voting selections (See figure 7, continued);

a memory (inherent in either of the terms PC or server) coupled to said processor for storing the voting record and the voting session identifier (all of the voter's PC, the Authentication Server, the Journal server, and the Results Server appear to qualify); and

means coupled to said processor for storing the voting record and the voting session identifier in a tangible medium separate from said memory (e.g. a second server with a memory or storage device, such as the Journal server).

While the Examiner finds that a Journal server inherently contains a tangible medium for storage, if the term "tangible" is construed more narrowly to mean one of a portable non-volatile electronic memory such as a smart card or a portable printed memory such as a printed receipt, it is not clear that Challenger would qualify. First, Examiner takes the position that PCs and servers are known to operate with printers, which can generally print anything that can be displayed by the PC or server. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a printer to print out the ballot, in order to have a "hard copy" of the voting record in case of computer failure, an obvious procedure and motivation understood by any person skilled in the art.

In addition, Examiner takes the position that Fed teaches the use of a tangible medium to provide a voter confirmation of the vote and to assure accuracy in Direct Recording Electronic voting machines. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a printout of the voter ballot and information taught by Challenger as suggested by Fed because such a printout would provide a voter confirmation of the recorded vote, in case there was some mistake in the voter's selections. See especially section E.5 "Voter Confirmation in DRE Systems". Fed clearly teaches that the tangible medium for each voting session is issued by said means for storing after the voting record and unique voting session identifier for the voting session is stored therein and before a next voting session. "The voter confirmation capability may be implemented using the same data processing path that provides for the capture and retention of ballot images. After a voter has made all voting selections, the DRE machine should display or print on a paper ballot a summary of the voter's selections." In section 4.8.1.1 Fed teaches that audit records, including those used for recounts or litigation, should include a time and date stamp. Section 2.3.2 states that electronic images of the ballots must be stored for auditing, and should be time stamped. Section 4.5 repeats some of this teaching. Date and time

are one way to render each ballot unique so as to insure the integrity of the system. Challenger also teaches the use of unique session identifiers.

Re claims 15-16, the authentication server, like the other servers, provides the ballot ID in encrypted form. The encryption described in Challenger involves the production of random or pseudo random numbers to protect the voter's identity; the skilled artisan is directed to see Schneier, referenced in Challenger in the first paragraph of column 4, for details.

Re claims 17, 25 the ballot ID would not be called a ballot ID if it were to identify the voter, and there would be no reason to provide the voter ID if it did.

Claims 1-61 and 65-102 are rejected under 35 U.S.C. § 103 as being unpatentable over Challenger as modified by Fed, in view of U.S. Patent #6,412,692 to Miyagawa ("Miyagawa" hereinafter). Challenger either alone or as modified by Fed teaches the features of the invention as described above, but does not teach that the record of the vote may be stored on the smart card. Miyagawa teaches that the record of the vote may be stored on the smart card. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to store the information on the smart card as described by Miyagawa because this would provide a portable voter confirmation analogous to the portable printed confirmation taught by Fed.

Re claim 11, Fed teaches that it may be required to keep the confirmations at the voting station, to avoid possible illegal activities. In any case, once the vote has been confirmed, the voter does not necessarily need to keep and possess the confirmation, and the State has interests in the confirmation.

Re claim 12, see figure 14 of Miyagawa.

Re claims 10, 22-23, the combination of a printed confirmation and confirmation stored in the smart card is suggested by the references as a whole.

Re claim 73, nothing in Challenger requires an Internet connection. The server/client configuration works fine in a LAN configuration. It would have been obvious

at the time the invention was made to a person having ordinary skill in the art to implement the combined teachings on a LAN, at a polling place, with the various servers on site at the polling place, because this would reduce reliance on the Internet, which is known to have security risks and connectivity problems during high loads.

Claims 62-64 are rejected under 35 U.S.C. § 103 as being unpatentable over Challenger as modified by Fed, in view of Miyagawa, and further in view of 1998 Advanced Card Technology Sourcebook ("Sourcebook" hereinafter). Challenger as modified by Fed, in view of Miyagawa teach the features of the invention, but are silent on the sizes of the storage on smart cards. Sourcebook teaches that 32K cards were feasible in 1997, and predicted to increase to 64K by 1999. Sourcebook also teaches that large EEPROMs are desirable, since applications can be loaded and deleted in a secure fashion onto them. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a smart card having at least 32K, at least because such a smart card is more versatile and adaptable to multiple applications, as understood in the art, making the voter card more versatile, and useful for other applications. There are as many reasons to want larger storage size on a smart card, as there is for wanting more storage on a PC.

### ***Response to Arguments***

Applicant argues that Challenger does not apply because Challenger discloses a distributed system that may not be used at a polling place without connection to an external server. The Examiner respectfully disagrees with this line of reasoning.

Challenger discloses a flexible system which can be made to accommodate both in-person and Internet voting. However, any or all of the various parts of Challenger may be "self contained" at a polling location. It is merely a question of putting them in the same housing or building. Challenger is inherently amenable to many different housing arrangements.

Applicant argues that Challenger only teaches a generalized ballot ID which does not identify individual ballots, but groups of ballots. Examiner respectfully disagrees. In figure 1, it is clear that there are to be N voters and N ballots, where  $N=N$ , not N voters and M ballots, where  $N>M$ . This is especially apparent in figure 6, item 353. In fact, the

authentication scheme taught by Challenger relies on unique ballots, not groups of identical ballots, for verification. This ensures that neither the voter nor the host of the vote can change the vote after it is cast, since the voter would need the secret key of the host to forge a revised ballot, and the host would need the secret key of the voter to forge a revised ballot. Thus, Applicant's assertions that Applicant's invention is different on this score does not persuade Examiner.

Applicant argues that in Fed, "There is no description or suggestion in the FEC Standard of providing an independent record on a tangible medium that is separated from and/or issued by the voting machine at the conclusion of each voting session, as claimed by Applicant in the present Application." Examiner respectfully disagrees. Applicant's attention is directed to section E.5. This section expressly contradicts Applicant's assertion. Together with other sections pointed out in the restatement of the rejection, Fed clearly fills in the gaps in Challenger.

Applicant provides some evidence of a "long felt need" for Applicant's invention. Examiner remains unpersuaded by such evidence. Many of the writers appear to refer to what is available either at their voting places or commercially. Every patent examiner is aware of plenty of instances where skilled artisans are not aware of everything ever invented in their field. Appellant writes, How can the Examiner be correct that the FEC Standard describes or suggests Applicant's invention when recognized authors many years thereafter are still writing articles seeking a solution? The answer is simple - it is just not obvious based upon the FEC Standard and/or Challenger." Examiner has two alternative answers, since Applicant's invention clearly is obvious over Challenger in view of Fed. First, skilled artisans may not be aware of everything invented in their field. Second, the costs for converting the infrastructure often prevail. As an example for the second reason, the average American need only look to their own wallet, where they will probably find numerous cards encoded with magnetic stripes. Many people aren't aware of smart cards, or their capabilities, even though smart cards were invented in the 1970s and filled a "long felt need" at that time to replace the inherently insecure magnetic stripe card.



Applicant argues that Miyagawa fails to teach the recording of the vote on the card. Examiner respectfully disagrees. While Miyagawa allows the voter to receive a "voting paper", it is clear that the main emphasis is on receiving a "voting card". The voting history is recorded on the card. See, e.g. figure 3. Applicant appears to be arguing against Miyagawa as a reference which does not show all of the features of the invention. While Examiner does not disagree, this line of argument is not relevant. Miyagawa is cited in the context of Challenger and Fed. Miyagawa teaches the recording of a voting history on a smart card, as opposed to paper. This teaching of recording a voting history can be applied in an obvious fashion to the base references.


Examiner acknowledges the amended claims to domestic priority referenced in Applicant's amendment.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

#### **Voice**

Inquiries for the Examiner should be directed to Mark Tremblay at (571) 272-2408. The Examiner's regular office hours are 10:30 am to 7:00 pm EST Monday to Friday. Voice mail is available. Technical questions and comments concerning PTO procedures may be directed to the Patent Assistance Center hotline at 1-800-786-9199 or (703) 308-4357.

  
**MARK TREMBLAY**  
**PRIMARY EXAMINER**

2/9/04